

What is claimed is:

1. A turning device for a heavy object characterized as comprising: a turning arm joined to the heavy object and turning around a turning pivot on the axial line and a drive device for driving turning operation of the turning arm wherein: the drive device is composed of: a fixing section, a rotation input section, a rotation output section having an orthogonal plane orthogonal to the axial line of the turning pivot, a planetary gear type speed reducer with a pair of ball bearings disposed between the fixing section and the rotation output section and a motor including a rotor shaft coaxially connected to a stator having a coil and the rotation input section of the planetary gear type speed reducer; and that the turning arm has a first plane connected to the plane of the rotation output section and a second plane connected to the heavy object, positioned nearer to the heavy object from the axial line of the turning pivot and orthogonal to the first plane, and the turning arm and the drive device are disposed within a width of the turning pivot of the heavy object in the axial direction.
2. The turning device for a heavy object according to claim 1 wherein: the axial center of the turning pivot of the heavy object is positioned within a distance between one of the pair of ball bearings, which is positioned on the orthogonal plane side of the rotation output section, and an intersection obtained by crossing the axial line of the turning pivot with a line at a bearing contact angle to the perpendicular line of the one ball bearing.
3. The turning device for a heavy object according to claim 1 wherein: a previous-stage speed reducer as a previous-stage reduction gear mechanism is disposed between the planetary gear type speed reducer and the motor; an input rotation section of the previous-stage speed reducer and the rotor shaft of the motor are coaxially coupled to each other; and the output rotation section of the previous-stage reducer and the input rotation section of the planetary gear type speed reducer are coaxially coupled to each other.
4. The turning device for a heavy object according to claim 1 wherein: a supporting block for fixing the planetary gear type speed reducer and a frame for mounting the supporting block are provided; the fixing section of the planetary gear type speed reducer has a circular outside-diameter section and a mounting flat surface parallel to the plane of the rotation output section; the supporting block includes a first mounting

surface for mounting the mounting flat surface of the fixing section of the planetary gear type speed reducer, a second mounting surface for mounting the frame and orthogonal to the first mounting surface, and a pair of rib sections for connecting outer both ends of the first mounting surface with outer both ends of the second mounting surface; and the outside-diameter section of the mounting flat surface of the fixing section of the planetary gear type speed reducer is cut so that its side of the pair of ribs may be shorter than the circular outside diameter.

5. A turning device for a heavy object comprising: a turning arm joined to a heavy object and turning around a turning pivot on the axial line and a drive device for driving turning operation of the turning arm wherein: the drive device includes a fixing section, a rotation input section, a rotation output section having an orthogonal plane orthogonal to the axial line of the turning pivot, a planetary gear type reducer having a pair of ball bearings disposed between the fixing section and the rotation output section, and a motor disposed coaxially to the rotation input section of the planetary gear type speed reducer; the turning arm has a first plane joined to the plane of the rotation output section and a second plane orthogonal to the first plane; and the turning arm and the drive device are disposed within a width in the axial direction of the turning pivot of the heavy object.